

**IN THE CLAIMS**

**Please amend the claims as follows:**

Claims 1-14 (Canceled).

Claim 15 (Currently Amended): A temperature control element comprising:

a plate having a first side configured to be disposed on an optical waveguide and a second side opposite to the first side, a heater or heat absorber provided on ~~a non-heating side~~ the second side of the plate thereof or buried therein;

wherein:

a total area of contact between a pedestal provided to support the plate thereon in contact with ~~mainly the non-heating~~ the second side of the plate and the plate including the heater or heat absorber is over 30% of an area of the ~~non-heating~~ second side of the plate; and

a sum of surface roughness of the plate and heater or heat absorber at a portion where the plate and heater or heat absorber is in contact with the pedestal and ~~that~~ surface roughness of the pedestal at a portion where the pedestal is contact with the plate and heater or heat absorber at a side of the plate at the pedestal side is over 0.05  $\mu\text{m}$ .

Claim 16 (Currently Amended): The element according to claim 15, wherein the pedestal supports the plate in contact with an edge and/or end face at the ~~non-heating~~ second side of the plate.

Claim 17 (Previously Presented): The element according to claim 15, wherein the plate is formed from ceramics.

Claim 18 (Currently Amended): A temperature controller comprising:

a temperature control element and a pedestal to support the temperature control element thereon inside a casing; wherein:

the temperature control element includes a plate having a first side configured to be disposed on an optical waveguide and a second side opposite to the first side, a heater or heat absorber provided on ~~a non-heating~~ the second side of the plate ~~thereof~~ or buried therein;

a total area of contact between a pedestal provided to support the plate thereon in contact with ~~mainly the non-heating~~ the second side of the plate and the plate including the heater or heat absorber is over 30% of an area of the ~~non-heating~~ second side of the plate; and

a sum of surface roughness of the pedestal at a portion where the pedestal is in contact with the plate and heater or heat absorber and surface roughness of the plate and heater or heat absorber at a portion where the plate is in contact with the pedestal ~~side~~ is over 0.05  $\mu\text{m}$ .

Claim 19 (Currently Amended): The controller according to claim 18, wherein the pedestal supports the plate in contact with an edge and/or end face at the ~~non-heating~~ second side of the plate.

Claim 20 (Previously Presented): The controller according to claim 18, wherein the plate is formed from ceramics.

Claim 21 (Currently Amended): A waveguide optical module comprising:

a temperature control element supported ~~in air~~ on a pedestal inside a casing; and

an optical waveguide mounted on the temperature control element; wherein:

the temperature control element includes a plate having a first side configured to be disposed on the optical waveguide and a second side opposite to the first side, a heater or heat absorber provided on ~~a non-heating~~ the second side of the plate ~~thereof~~ or buried therein;

a total area of contact between the pedestal provided to support the plate thereon in contact with ~~mainly the non-heating~~ the second side of the plate and the plate including the heater or heat absorber is over 30% of an area of the ~~non-heating~~ second side of the plate; and

a sum of surface roughness of the pedestal at a portion where the pedestal is in contact with the plate and heater or heat absorber and surface roughness of the plate and heater or heat absorber at a portion where the plate is in contact with the pedestal ~~and that at a side of the plate at the pedestal side~~ is over 0.05  $\mu\text{m}$ .

Claim 22 (Currently Amended): A temperature control element comprising:

a plate having a first side configured to be disposed on an optical waveguide and a second side opposite to the first side, a heater or heat absorber provided on ~~the non-heating~~ the second side of the plate thereof or buried therein;

a pedestal provided to support the plate thereon in contact with ~~mainly the non-heating~~ the second side and of the plate, and the pedestal and plate ~~are being~~ superposed one on another with a thermal insulation laid between them; and wherein

a sum of area of contact between the pedestal and the plate including the heater or heat absorber and superposed on the pedestal with the thermal insulation laid between them is over 30% of an area of the ~~non-heating~~ second side of the plate.

Claim 23 (Currently Amended): The element according to claim 22, wherein the pedestal supports the plate in contact with an edge and/or end face at the ~~non-heating~~ second side of the plate.

Claim 24 (Previously Presented): The element according to claim 22, wherein the plate is formed from ceramics.

Claim 25 (Currently Amended): A temperature controller comprising:  
a temperature control element including a plate having a first side configured to be disposed on an optical waveguide and a second side opposite to the first side; and  
a pedestal provided to support the plate thereon inside a casing; wherein:  
the temperature control element includes ~~a plate having~~ a heater or heat absorber provided on ~~a non-heating~~ the second side of the plate thereof or buried therein;  
the pedestal is ~~mainly~~ in contact with the ~~non-heating~~ second side of the plate, and the pedestal and plate are superposed one on another with a thermal insulation laid between them; and  
a sum of area of contact between the pedestal and the plate including the heater or heat absorber and superposed on the pedestal with the thermal insulation laid between them is over 30% of an area of the ~~non-heating~~ second side of the plate.

Claim 26 (Currently Amended): The controller according to claim 25, wherein the pedestal supports the plate in contact with an edge and/or end face at the ~~non-heating~~ second side of the plate.

Claim 27 (Previously Presented): The controller according to claim 25, wherein the plate is formed from ceramics.

Claim 28 (Currently Amended): A waveguide optical module comprising:  
a temperature control element supported on a pedestal inside a casing, including a plate having a first side and a second side opposite to the first side; and

an optical waveguide mounted on the first side of the plate of the temperature control element; wherein:

the temperature control element includes ~~a plate having~~ a heater or heat absorber provided on a ~~non-heating~~ second side of the plate thereof or buried therein;

the pedestal is ~~mainly~~ in contact with the ~~non-heating~~ second side of the plate, and the pedestal and plate are superposed one on another with a thermal insulation laid between them; and

a sum of area of contact between the pedestal and the plate including the heater or heat absorber and superposed on the pedestal with the thermal insulation laid between them is over 30% of an area of the ~~non-heating~~ second side of the plate.

Claim 29 (New): The element according to claim 15, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.

Claim 30 (New): The controller according to claim 18, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.

Claim 31 (New): The waveguide optical module according to claim 21, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.

Claim 32 (New): The element according to claim 22, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.

Application No. 10/500,866

Reply to Office Action dated September 20, 2005

Claim 33 (New): The controller according to claim 25, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.

Claim 34 (New): The waveguide optical module according to claim 28, wherein a plurality of heaters or heat absorbers are provided on the second side of the plate or buried therein.